In the Claims:

1. (previously presented) An induction instrument comprising:

a quadrupole transmitter for transmitting an electromagnetic signal into a layered formation adjacent a well bore;

a receiver for receiving a signal from the formation in response to the transmitted electromagnetic signal; and

a processor for analyzing the received signal and for determining from the received signal polarity indicative of a direction for a boundary between layers in the well bore.

2. (previously presented) The instrument of claim 1, wherein the quadrupole transmitter further comprises a first transmitter coil having a moment pointing in a first direction substantially perpendicular to a well bore axis and a second transmitter coil having a moment pointing in a direction opposite to the first direction.

3. (previously presented) The instrument of claim 2, further comprising:

a receiver positioned between the first and second transmitter coils and having a moment substantially perpendicular to the well bore axis.

4. (original) The instrument of claim 3, wherein the first transmitter coil and second transmitter coil are separated by a distance of about 10 cm.

5. (currently amended) The instrument of claim 2 further comprising:

a switch for reversing a direction for a current flowing in the first transmitter coil so that the moment of the first transmitter coil and the moment of the second transmitter coil

point in the same direction for obtaining array type induction measurements ~~resistitivy~~ resistivity data.

6. (previously presented) The instrument of claim 1, further comprising:
electronics for exciting the transmitter at a frequency ranging from 100 kHz to 2 MHz.

7. (original) The instrument of claim 2, wherein the opposing transmitter coil moments cancel eddy currents induced in the conductive drill.

8. (original) The instrument of claim 1, wherein the signal received from the formation further comprises:
an in-phase and quadrature component.

9. (previously presented) The instrument of claim 1, further comprising:
a sign reversal between a signal received from an up boundary for a layer above the instrument and a signal received from a boundary for a layer below the instrument.

10. (currently amended) The instrument of claim 2, further comprising:
an array of receivers for obtaining array type induction measurements ~~resistitivy~~ resistivity data.

11. (previously presented) A method for determining the direction of a layer in formation comprising:

transmitting from a quadrupole transmitter in an induction tool an electromagnetic signal into a layered formation adjacent a well bore;

receiving a signal from the formation in response to the transmitted electromagnetic signal; and

determining from the received signal polarity a direction for a boundary between layers in the formation.

12. (previously presented) The method of claim 11, further comprising:

directing a current into a first transmitter of the quadrupole transmitter thereby generating a moment pointing in a first moment direction substantially perpendicular to a wellbore longitudinal axis; and

directing current into a second transmitter coil of ~~a~~ the quadrupole transmitter thereby generating a moment pointing in a direction opposite to the first moment direction.

13. (previously presented) The method of 12, further comprising:

positioning a receiver between the first and second transmitter coils for receiving ~~a~~ the signal from the formation.

14. (original) The method of claim 13, further comprising:

separating the first transmitter coil and second transmitter coil by a distance of about 10 cm.

15. (previously presented) The method of claim 12 further comprising:

reversing a direction for ~~a~~ the current flowing in the first transmitter coil so that the

moment of the first transmitter coil and the moment of the second transmitter coil point in the same direction for obtaining array type induction resistivity measurement data.

16. (previously presented) The method of claim 11, further comprising:
exciting the transmitter at a frequency ranging from 100 kHz to 2 MHz.

17. (previously presented) The method of claim 12, further comprising:
generating opposing transmitter coil moments for canceling eddy currents induced in a conductive drill.

18. (currently amended) The method of claim 11 further comprising:
obtaining array type induction measurements ~~resistitivy~~ resistivity data

19. (original) The method of claim 11, further comprising:
processing an in-phase and quadrature component of the signal received from the formation.

20. (original) The method of claim 11, further comprising:
detecting a sign reversal between a signal received from an up boundary for a layer above the instrument and a signal received from a down boundary for a layer below the instrument.

21. (previously presented) A computer readable medium containing instruction that when executed by a computer perform a method for determining the direction of a layer in a

formation comprising:

transmitting from a quadrupole transmitter in an induction tool, an electromagnetic signal into a layered formation adjacent a well bore;

receiving a signal from the formation in response to the transmitted electromagnetic signal; and

determining from a received signal polarity a direction for a boundary between layers in the formation.

22. (currently amended) The medium of claim 21, the method further comprising:

directing a current into a first transmitter of a the quadrupole transmitter thereby generating a moment pointing in a first moment direction substantially perpendicular to a wellbore longitudinal axis; and

directing current into a second transmitter coil of the quadrupole transmitter thereby generating a moment pointing in a second direction opposite to the first moment direction.

23. (cancelled)

24. (cancelled)

25. (previously presented) The medium of claim 22, the method further comprising:

reversing a direction for a current flowing in the first transmitter coil so that the moment of the first transmitter coil and the moment of the second transmitter coil point in the same direction for obtaining array type induction measurements resistivity data.

26. (previously presented) The medium of claim 21, the method further comprising:
exciting the transmitter at frequencies ranging from 100 kHz to 2 MHz.

27. (previously presented) The medium of claim 22, the method further comprising:
generating opposing transmitter coil moments for canceling eddy currents induced in a conductive drill.

28. (currently amended) The medium of claim 21, the method further comprising:
obtaining array type induction measurements ~~resistitivy~~ resistivity data.

29. (previously presented) The medium of claim 21, wherein the signal received from the formation further comprises:
an in-phase and quadrature component of the signal received from the formation.

30. (original) The medium of claim 21, further comprising:
detecting a sign reversal between a signal received from an up boundary for a layer above the instrument and a signal received from a down boundary for a layer below the instrument.